

Attorney's Docket No. 742158-9

Application No. 10/798,305

Page 2

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A polishing sheet comprising:

an elastic plastic foam sheet,

wherein the elastic plastic foam sheet includes a surface layer having foam cells, and a polishing layer having foam cells, said polishing layer further having a polishing face disposed on one side of said ~~disposed at one side of a~~ surface layer that is allowed to wear away in a direction opposite from said surface layer from the polishing layer by polishing,

the polishing layer ~~has~~ having a thickness larger than a thickness of the surface layer, and

the polishing layer having ~~has~~ an approximately uniform distribution of foam cells both foam-structure in a direction of the thickness and in a direction of the width of the elastic plastic foam sheet ~~by being formed of foams~~, said foam cells ~~foams~~ formed at in the polishing layer having an average a space volume ~~that is larger than an average space volume that of foams formed at in~~ the surface layer, and

wherein said foam cells ~~foams~~ formed in at the polishing layer are interconnected by communicating to form a network of continuous holes between said foam cells whose average space volume diameter is substantially smaller than a said average space volume diameter of the foam cells ~~space volume of the foams~~ formed in at the polishing layer, and

wherein an average length of said polishing layer foam cells adjacent to said polishing face is less than half of said thickness of said polishing layer.

2. (Original) A polishing sheet according to claim 1, wherein a thickness of the polishing layer is not less than 50 μm .

3. (Original) A polishing sheet according to claim 1, wherein the elastic plastic foam sheet is made of polyurethane.

4. (Withdrawn) A polishing sheet according to claim 1, wherein the elastic plastic foam sheet is integrally formed by the surface layer, the polishing layer, and an elastic layer which gives elasticity to the polishing layer.

Attorney's Docket No. 742158-9
Application No. 10/798,305
Page 3

5. (Withdrawn) A polishing sheet according to claim 4, wherein foams, whose space volume is larger than that of the foams formed at the polishing layer and which are long in the direction of the thickness of the elastic plastic foam sheet, are formed at the elastic layer.

6. (Withdrawn) A polishing sheet according to claim 1, wherein the polishing sheet further has a supporting layer which is made of at least one selected from a flexible film, a nonwoven fabric and a woven fabric and which is disposed at one side of the elastic plastic foam sheet to support the elastic plastic foam sheet.

7. (Withdrawn) A polishing sheet according to claim 6, wherein the polishing sheet further has an elastic layer which gives elasticity to the polishing layer and which is disposed between the elastic plastic foam sheet and the supporting layer.

8. (Withdrawn) A polishing sheet according to claim 7, wherein the polishing sheet further has a flexible film between the elastic plastic foam sheet and the elastic layer.

9. (Original) A polishing sheet according to claim 1, wherein a groove for accommodating and discharging shavings occurred from a material to be polished is formed at the surface layer and the polishing layer.

10. (Withdrawn) A polishing sheet according to claim 1, wherein the surface layer is removed from the elastic plastic foam sheet.

11. (Withdrawn) A polishing sheet according to claim 10, wherein a thickness of the polishing layer is not less than 50 μm .

12. (Withdrawn) A polishing sheet according to claim 10, wherein the elastic plastic foam sheet is integrally formed by the polishing layer and an elastic layer which gives elasticity to the polishing layer.

Attorney's Docket No. 742158-9
Application No. 10/798,305
Page 4

13. (Withdrawn) A polishing sheet according to claim 10, wherein the polishing sheet further has a supporting layer which is made of at least one selected from a flexible film, a nonwoven fabric and a woven fabric and which is disposed at one side of the elastic plastic foam sheet to support the elastic plastic foam sheet.

14. (Withdrawn) A polishing sheet according to claim 10, wherein a groove for accommodating and discharging shavings occurred from a material to be polished is formed at the polishing layer.

15. (Withdrawn) A manufacturing method of an elastic plastic foam sheet for a polishing sheet, comprising the steps of;

coating approximately uniformly a polyurethane resin emulsion, which includes a polyurethane resin, a first organic solvent that the polyurethane resin can be dissolved, and a second organic solvent whose solubility to water is smaller than that of the first organic solvent and which controls coagulation of the polyurethane resin, to a base material; and

soaking the base material coated by the polyurethane resin emulsion into a coagulation liquid whose main component is water,

and wherein the elastic plastic foam sheet has a polishing layer which is disposed inside a surface layer and which is allowed to wear away by polishing and whose thickness is larger than a thickness of the surface layer, and the polishing layer has an approximately uniform foam structure in a direction of the thickness of the elastic plastic foam sheet by being formed foams whose space volume is larger than that of foams formed at the surface layer and which are communicated so as to form a network by continuous holes whose diameter is smaller than that of the space volume of the foams formed at the polishing layer.

16. (Withdrawn) A manufacturing method according to claim 15, wherein the second organic solvent is ethyl acetate, and the polyurethane resin emulsion is prepared by adding the second organic solvent of a range of from 20 parts to 45 parts to a polyurethane resin solution, that the polyurethane resin is dissolved into the first organic solvent, of 100 parts.

Attorney's Docket No. 742158-9

Application No. 10/798,305

Page 5

17. (Withdrawn) A manufacturing method according to claim 15, wherein the method further comprising a step of removing the surface layer from the elastic plastic foam sheet.

18. (Withdrawn) A manufacturing method of an elastic plastic foam sheet for a polishing sheet, comprising the steps of;

coating approximately uniformly a polyurethane resin emulsion, which includes a polyurethane resin and a third organic solvent that the polyurethane resin can be dissolved, to a base material; and

soaking the base material coated by the polyurethane resin emulsion into a coagulation liquid including a fourth organic solvent and water,

and wherein the elastic plastic foam sheet has a polishing layer which is disposed inside a surface layer and which is allowed to wear away by polishing and whose thickness is larger than a thickness of the surface layer, and the polishing layer has an approximately uniform foam structure in a direction of the thickness of the elastic plastic foam sheet by being formed foams whose space volume is larger than that of foams formed at the surface layer and which are communicated so as to form a network by continuous holes whose diameter is smaller than that of the space volume of the foams formed at the polishing layer.

19. (Withdrawn) A manufacturing method according to claim 18, wherein a density of the fourth organic solvent in the coagulation liquid is ranged of from 20 weight percent to 50 weight percent.

20. (Withdrawn) A manufacturing method according to claim 18, wherein the method further comprising a step of removing the surface layer from the elastic plastic foam sheet.

21. (New) The polishing sheet of claim 1, wherein the average length of the polishing layer foam cells adjacent to said polishing face is less than one-third of said thickness of said polishing layer.

Attorney's Docket No. 742158-9
Application No. 10/798,305
Page 6

22. (New) The polishing sheet of claim 1, wherein said polishing layer foam cells are substantially spherical or ellipsoidal in shape, such that their major axes are, on average, less than twice as long as their minor axes.

23. (New) The polishing sheet of claim 1, wherein the average length of all of said polishing layer foam cells is less than half the thickness of said polishing layer.